

A4 Sub 123  
cont. 123  
including the step of formatting the contents of the reaction vessels into a spatially-addressable array.

13. (amended) The method of Claim 10[, 11] or [12] 11, wherein each [base module] compound in the array is unique.

#### REMARKS

Applicants appreciate the courtesies extended to their representatives, Allan Fanucci, Michael Rivard and Mark Russett, during an interview with Examiner P. Achutamurthy on August 4, 1998. The comments and amendments appearing herein are substantially the same as those which were presented and discussed during the interview. For the Examiner's convenience, a copy of the claims after entry of this amendment is attached hereto as Appendix A.

#### AMENDMENTS OF THE SPECIFICATION

The specification has been amended to conform to the amended claims. Specifically, on page 11, the text was amended by adding "oxygen" to the list of atoms. On page 18, the text was amended by changing the term "carbon atoms" to --atoms of carbon, nitrogen, oxygen, sulfur, phosphorus, or combinations thereof,-- as this is what is illustrated in the scaffold backbones that are disclosed throughout the specification. As these changes do not involve new matter, their entry at this time is appropriate.

#### AMENDMENTS OF THE CLAIMS

Claims 1-6, 9-10 and 12-13 have been amended to more clearly define the subject matter of Applicants' invention. Specifically, Claims 1, 4 and 10 have been amended to recite with greater clarity the compounds and sub-array features of Applicants' arrays and method of making the same. Additionally, Claim 1, as well as Claims 2, 3, 5 and 6 have been amended to delete the expression "molecular construct." Claims 12 and 13 have been amended to correct errors in dependency. Lastly, the expression "base module" has been

deleted from Claim 13.

The amendments are fully supported by the specification and claims as originally filed. Accordingly, they do not constitute new matter, and entry thereof is respectfully requested.

#### REJECTIONS UNDER 35 U.S.C. §112

Claims 1-15 were rejected under 35 U.S.C. §112 as allegedly being non-enabled by the specification for "arrays comprising molecular constructs of undefined and unspecified chemical characteristics".

In response, applicants have amended claims 1 and 10 to recite particular arrays and sub-arrays of compounds having a same common molecular core comprising at least three atoms of carbon, nitrogen, oxygen, phosphorus or sulfur and at least two structural diversity elements, wherein the compounds composing the first sub-array each have at least one common structural diversity element and the compounds composing the second sub-array each have at least one common structural diversity element, and wherein the compounds of each sub-array differ from one another by one change in a structural diversity element. Accordingly, the rejection should be withdrawn as there is no indefiniteness as to the molecules or compounds that can be used in the arrays and sub-arrays.

The office action notes that the specification teaches "specific building blocks . . . which have functionalities that will enable attachment of certain specific chemical moieties". Applicants submit that one of ordinary skill in the art having this teaching before him can easily adapt the present invention to other known chemistries to react and join compounds to form other molecules that can be used in the present arrays.

Additionally, the office action objects to terms such as "common molecular core" and "structural diversity elements" as being vague. Applicants note that, although broadly defined, those terms are not vague and do properly define the metes and bounds of the invention, because one of ordinary skill in the art can clearly understand the structure

of the molecules defined by those terms and how to prepared such molecules.

Furthermore, an applicant is permitted to use his or her own terminology as long as it can be understood, M.P.E.P. § 608.01(g), and as long as such terminology is defined in the specification. The Court of Appeals for the Federal Circuit, has addressed this issue. In Hormone Research Foundation, Inc. v. Genentech, Inc., 15 USPQ 2d 1039 (Fed. Cir., 1990), the court stated (at p. 1043), "It is a well-established axiom in patent law that a patentee is free to be his or her own lexicographer, . . . and thus may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings." (emphasis added).

In the present case, the terminology used is clearly defined in the specification, for example at page 17, line 34 to page 18, line 11 for the term "molecular core" and at page 20, line 13 to page 26, line 5 for the term "structural diversity element(s)". To the extent that the rejection as to the latter term was based on the adjective "common", applicants submit that the amended claims make it clear that it is the same core that is present in the compounds of the array. To the extent that the rejection as to the latter term was based on the adjective "variable", applicants note that this adjective has been deleted. For all the above reasons, the section 112 rejection has been overcome and should be withdrawn.

#### OBVIOUSNESS-TYPE DOUBLE-PATENTING

Various claims were rejected for obviousness-type double patenting over two related patents and an allowed related application of the assignee. In response to these rejections, applicants submit herewith a terminal disclaimer signed by their attorney. Thus, these rejections have been overcome and should be withdrawn.

#### CONCLUSION

In view of the above, it is submitted that the entire application is now in condition for allowance. A

prompt notice to this effect would be appreciated due to the presence of the disclaimer.

No fee is believed to be due for the submission of this response other than the fee for recording the disclaimer which is transmitted separately. Please charge any required fees to Pennie & Edmonds LLP deposit account no. 16-1150.

Respectfully submitted,

Date 8/26/98

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Enclosure

## APPENDIX A

1. (amended) A logically-ordered, spatially-addressable array of at least 10 compounds having a same common linear, branched or cyclic molecular core comprising at least three atoms of carbon, nitrogen, oxygen, phosphorus or sulfur and at least two structural diversity elements, said array comprising at least a first sub-array and a second sub-array, wherein the compounds composing the first sub-array each have at least one common structural diversity element and the compounds composing the second sub-array each have at least one common structural diversity element, and wherein the compounds composing each sub-array differ from one another by one change in a structural diversity element.

2. (amended) The array of Claim 1, wherein each compound composing the array is unique.

3. (amended) The array of Claim 1, wherein each compound composing the array is the product of a solution-phase reaction.

4. (amended) The array of Claim 1 comprising at least three sub-arrays, wherein the compounds composing each sub-array differ from one another by one change in a structural diversity element.

5. (amended) The array of Claim 1, wherein each compound is the product of a condensation reaction having at least two components, the first component comprising a first same reactive group and a different first structural diversity element and the second component comprising a second same reactive group and a second structural diversity element, said condensation reaction being carried out under conditions wherein the first and second reactive groups react to form the compound.

6. (amended) The array of Claim 1, wherein each compound is the product of a condensation reaction having at least three components, the first component comprising a first same reactive group and a different first structural diversity element, the second component comprising a second same reactive group and a second structural diversity element and the third component comprising a third same reactive group and a third structural diversity element, said condensation reaction being carried out under conditions wherein the first, second and third reactive groups react to form the compound.

7. The array of Claim 1, wherein the compounds composing the array have from 2 to 5 structural diversity elements.

8. A logically-ordered, spatially-addressable array of compounds, wherein each compound composing the array comprises a same common molecular core, a first structural diversity element and a second structural diversity element, said array comprising a first sub-array and a second sub-array, wherein the compounds composing the first sub-array each have the same first structural diversity element and the compounds composing the second sub-array each have the same second structural diversity element.

9. (amended) The array of Claim 8 wherein the compounds composing each sub-array differ from one another by one change in a structural diversity element.

10. (amended) A method of making a logically-ordered, spatially-addressable array of compounds having a same common linear, branched or cyclic molecular core structure comprising at least three atoms of carbon, nitrogen, oxygen, phosphorus or sulfur and at least two structural diversity elements, said array comprising at least a first sub-array and a second sub-array, wherein the compounds composing the first sub-array each have at least one common structural diversity element and the compounds composing the

second sub-array each have at least one common structural diversity element, said method comprising the steps of:

(a) providing a plurality of reaction vessels organized into the first and second sub-arrays;

(b) adding reactants to each of the reaction vessels in a manner such that when reacted, the reactants form the compounds of the array, and such that the compounds composing each sub-array differ from one another by one change in a structural diversity element; and

(c) reacting the contents of each reaction vessel under appropriate conditions to form the compounds of the sub-arrays in the logically-ordered array.

11. A method of making a combinatorial array of compounds, said method comprising the steps of:

(a) apportioning into reaction vessels that are identifiable by their spatial addresses (i) a first plurality of compounds, each compound in the first plurality comprising a same first reactive group and a different first structural diversity element such that the compounds composing the first plurality differ from one another, with one first compound per reaction vessel; and (ii) a second compound comprising a second reactive group and a second structural diversity element, with one second compound per reaction vessel; and

(b) reacting said first and second compounds under solution phase conditions wherein the first and second reactive groups react with one another by an addition reaction to form a compound, thus forming the combinatorial array of compounds.

12. (amended) The method of Claim 10 or 11 further including the step of formatting the contents of the reaction vessels into a spatially-addressable array.

13. (amended) The method of Claim 10 or 11, wherein each compound in the array is unique.

14. A method of identifying a compound having a property of interest, said method comprising the steps of:

(a) providing an array of compounds according to any one of Claims 1-9; and

(b) identifying which compounds in the array exhibit the property of interest.

15. The method of Claim 14 wherein the compound having the property of interest is identified by screening the array against a particular target.